

With reopening comes the threat of a second wave of COVID-19, scientists warn

Epidemiologists say not to get too comfortable with the new normal: Another wave could also mean a second lockdown.

By **Dasia Moore** Globe Staff, Updated May 25, 2020, 4:38 p.m.



The state opened a nine-lane COVID-19 drive-thru testing center in Lawrence last week. JOHN TLUMACKI/GLOBE STAFF

It could start in a half-empty restaurant or a Sunday morning church service, with a stray cough or a joyful hymn. Public health experts warn that without a vaccine or a heavy dose of caution, Massachusetts could easily be hit by a second wave of COVID-19 infections that rivals the first.

Such a wave could come in the fall or sooner, as restrictions ease and people return to traveling and spending time in crowded, closed-in spaces. And, experts say, if the state's tools for tracking the virus's spread are not up to snuff by then, a second wave could go undetected until it's too late.

The state began [reopening some stores and offices on Monday](#), the latest step in the long journey back to something resembling pre-pandemic life. But the road to normalcy may prove to be a two-way street.

Built into Governor Charlie Baker's [reopening plan](#) is something epidemiologists caution is not just possible but perhaps even likely: a return to the severe lockdowns of April and most of May.

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“The virus may be with us for a good part of the next year,” said Barry Bloom, a professor and former dean of Harvard T.H. Chan School of Public Health. “The public has to be prepared that there will be continuous monitoring of the numbers.”

Bloom said that reopening may not be a straight path toward a new normal. Rather, restrictions may ease in fits and starts — or even backtrack, with all or parts of the state periodically relapsing into total lockdown.

“If [the number of cases] gets to the point where they threaten again to be a giant peak and even overwhelm the hospitals,” he said, “the state and the cities are going to have to have some re-installation or re-imposition of constraints.”

From the very start of the coronavirus outbreak, those inside and outside of the scientific community have feared a second wave. History shows that several pandemics have returned with a vengeance after months of seeming calm. The Spanish flu of 1918 lasted two years. Its second peak was its deadliest.

Now, as Massachusetts reopens before it has fully left the first wave of infection behind, epidemiologists say fears of a second are well-founded.

“The chances are pretty high that we’re going to see the number of cases come back up” as the economy reopens, said Samuel Scarpino, a Northeastern University professor who specializes in infectious disease.

The question, Scarpino said, is just how much those case counts will rise.

There is no scientific definition of what constitutes a second wave of a pandemic. Scientists said easing stay-at-home guidelines will likely lead to a small, brief uptick in

cases at the least. But they agreed that a more serious resurgence was also possible.

Risk remains high because while thousands have been infected with COVID-19 — and have built some immunity as a result — the vast majority of the state has not. Without a vaccine or widespread immunity, the state remains nearly as vulnerable to a large outbreak as it was at the start of the pandemic.

“Not much has changed since when we first locked down, and we did that with good reason,” said Caroline Buckee, a Harvard T.H. Chan professor of epidemiology. “We have to be aware that if the virus starts spreading out of control, then we need to do something to stop that.”

Epidemiologists were divided on how soon a second wave of outbreaks could occur.

Bloom and Buckee thought fall was the earliest a wave would appear. They cited the seasonal nature of many viruses, as well as the probability that high-risk settings, including [universities](#) and [airports](#), are unlikely to be back to their usual capacity before then.

But Scarpino said that new flare-ups could come sooner, as Massachusetts and other states reopen some of the very sorts of places that sparked the pandemic’s earliest outbreaks.

“A fairly small percentage of people are resulting in a very large percentage of new cases,” Scarpino explained. “And with COVID-19, it’s not anything about the individual that makes them higher risk. It’s the setting that they find themselves in” — a poorly ventilated bar, an office with poor ventilation, a crowded house of worship.

“Certainly, there is a lot of concern around [religious services](#)” being reopened, said

Scarpino. "We've seen lots of the so-called super-spreading events happening at religious services and churches all over the US and all over the world."

Besides keeping tight restrictions on the types of gatherings that could fuel the disease's spread, experts said, the state should also ramp up testing and contact tracing programs.

"Opening up is occurring at a time where the numbers are not low enough to believe at this point we could identify every case and identify every contact," Bloom said. "And that would be the ideal situation."

Baker's reopening plan includes testing and contract tracing capacity as indicators that will help guide whether the state is ready to move forward with loosening restrictions. But Scarpino said that for now, the state has a long way to go, especially with tracing.

"Even though Massachusetts has some of the best testing in terms of volume now anywhere in the world," he said, most of those tests are being used to diagnose people who are already presumed to be sick.

"We need to have the testing and the contact tracing in place where we can be going out trying to find people who may be sick and prevent them from spreading the infection," Scarpino said.

Improved testing and tracing are just as crucial to identifying a second wave as they are to preventing one.

"We desperately need a rapid, inexpensive test," said Bloom. "If there's an increase in cases in the summer or fall, we've got to know as early as possible."

Because it takes weeks for most infected people to become sick enough to go to the hospital and even more time for the data to reflect an increase in deaths, a real-time count of confirmed cases could help the state catch a resurgence of COVID-19 in time to curb it.

Helen Jenkins, a Boston University biostatistics professor, said that better testing is not the only way for the state to get more real-time data. She emphasized the importance of monitoring R-value estimates, which measure how many other people one sick person eventually infects, on average.

“This is critical because we know that once R gets up to 1.1 or 1.2 then you have an exponentially growing outbreak,” Jenkins wrote in an e-mail. “Responding to [deaths, hospitalizations, and confirmed cases] will be too late. It’s so important that Gov Baker uses metrics that tell us about the ‘current’ infection rate.”

Scarpino used a metaphor to illustrate the urgency of rapid data: “This is a big ship, and it takes a lot of time to turn the ship.”

Scientists conceded that close monitoring does not guarantee the pandemic will remain beaten back. And in the event of a second wave, shutting down once more would be one of the few tools available to prevent more tragic losses.

“The governor has a staggered plan around reopening with the possibility that we would have to move backwards in that plan should things start to look worse,” Scarpino said. “The extent to which that is actually taken seriously ... may reduce the chance that we’d have a second wave.”

Buckee said the state needs clear data and criteria for what would trigger additional lockdowns. She added that the state should be transparent about any such standards.

“At the end of the day, any of these interventions that rely on people changing their behavior — they only work if people comply and if people are on board,” she said.

If the public hopes to avoid cycling in and out of lock downs, experts agreed on one course of action: Remaining vigilant.

“The reality is that we’re in for a long haul here,” said Buckee. “The virus hasn’t gone away.”

Scientists advised the public to continue wearing masks, washing hands frequently, avoiding crowds, and remaining physically distant whenever possible.

“I think the state has done a terrific job of planning. The outcome is dependent on the people, on us,” Bloom said. “I think the public is aware of what needs to be done.”

Dasia Moore can be reached at dasia.moore@globe.com. Follow her on Twitter [@daijmoore](https://twitter.com/daijmoore)

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